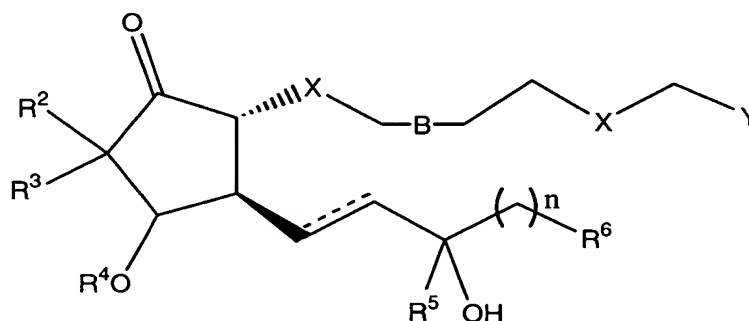


CLAIMS

What is claimed is:

1. A method of treating ocular hypertension or glaucoma which comprises
 5 administering to an animal having ocular hypertension or glaucoma a
 therapeutically effective amount of a compound represented by the general
 Formula I:



Formula I

10

wherein the dashed lines indicate the presence or absence of a bond, the hatched
 wedges indicate the α (down) configuration, and the solid triangles indicate the

- 15 β (up) configuration;

B is a single, double, or triple covalent bond;

n is 0-6;

X is CH₂, S or O;

Y is CONHCH₂CH₂OH or CON(CH₂CH₂OH)₂,

- 20 R is H, C₁₋₆ alkyl or C₂₋₆ alkenyl;

R² and R³ are C₁₋₆ linear alkyl which may be the same or different, and may be
 bonded to each other such that they form a ring incorporating the carbon to
 which they are commonly attached;

- R⁴ is hydrogen, R, C(=O)R, or any group that is easily removed under
 25 physiological conditions such that R⁴ is effectively hydrogen;

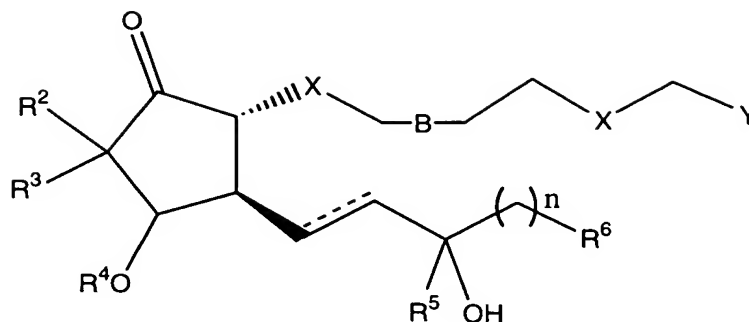
R⁵ is hydrogen or R; and

R⁶ is

- i) hydrogen;
 - ii) a linear or branched hydrocarbon containing between 1 and 8 carbon atoms, which may contain one or more double or triple bonds, or oxygen or halogen derivatives of said hydrocarbon, wherein 1-3 carbon or hydrogen atoms may be substituted by O or a halogen; or
 - iii) aryloxy, heteroaryloxy, C₃₋₈ cycloalkyloxy, C₃₋₈ cycloalkyl, C₆₋₁₀ aryl or C₃₋₁₀ heteroaryl, wherein one or more carbons is substituted with N, O, or S; and which may contain one or more substituents selected from the group consisting of halogen, trihalomethyl, cyano, nitro, amino, hydroxy, C₆₋₁₀ aryl, C₃₋₁₀ heteroaryl, aryloxy, heteroaryloxy, C₁₋₆ alkyl, OR, SR, and SO₂R.
2. A method of treating ocular hypertension or glaucoma which comprises administering to an animal having ocular hypertension or glaucoma a therapeutically effective amount of a compound selected from the group consisting of
- (3-((1*R*,4*S*,5*S*)-5-(3-chloro-benzo[*b*]thiophen-2-yl)-3-hydroxy-pent-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentylsulfanyl)-propylsulfanyl)-acetic acid methyl ester (**21**, **22**);
- (3-((1*R*,4*S*,5*S*)-5-(3-chloro-benzo[*b*]thiophen-2-yl)-3-hydroxy-pent-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentylsulfanyl)-propylsulfanyl)-acetic acid (**23**, **24**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-[(*E*)-5-(3-chloro-benzo[*b*]thiophene-2-yl)-3-hydroxy-pent-1-enyl]-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-ynoic acid methyl ester (**34**, **35**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-[(*E*)-5-(3-chloro-benzo[*b*]thiophene-2-yl)-3-hydroxy-pent-1-enyl]-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-ynoic acid (**36**,**37**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-[(*E*)-5-(3-chloro-benzo[*b*]thiophene-2-yl)-3-hydroxy-pent-1-enyl]-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid methyl ester (**38**,**39**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-[(*E*)-5-(3-chloro-benzo[*b*]thiophene-2-yl)-3-hydroxy-pent-1-enyl]-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid (**40**,**41**);

- (Z)-7-[(1R,4S,5R)-4-Hydroxy-5-((E)-3-hydroxy-5-phenyl-pent-1-enyl)-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-enoic acid methyl ester (**50,51**)
- (Z)-7-[(1R,4S,5R)-4-Hydroxy-5-((E)-3-hydroxy-5-phenyl-pent-1-enyl)-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-enoic acid (**52,53**)
- 5 (Z)-7-[(1R,4S,5R)-5-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-enoic acid (**54,55**)
- 7-[(1R,4S,5R)-5-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-heptanoic acid (**56,57**)
- (Z)-7-[(1R,4S,5R)-5-(4-Benzo[b]thiophen-2-yl-3-hydroxy-butyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-enoic acid (**58,59**)
- 10 (Z)-7-[(1R,4S,5R)-5-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-enoic acid ethylamide (**60,61**)
- (Z)-7-[(1R,4S,5R)-5-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-enoic acid diethylamide
- 15 (**62,63**)
- (Z)-7-[(1R,4S,5R)-5-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-enoic acid (2-hydroxy-ethyl)-amide (**64,65**)
- (3S,4R,5R)-4-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-3-hydroxy-
- 20 2,2-dimethyl-5-[(Z)-6-(1-H-tetrazol-5-yl)-hex-2-enyl]-cyclopentanone (**66,67**)
- (Z)-7-[(1R,4S,5R)-5-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-enoic acid amide (**68,69**)
- (Z)-7-[(1R,4S,5R)-5-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-enoic acid methyl ester (**70,71**)
- 25 7-[(1R,4S,5R)-5-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-ynoic acid methyl ester (**72,73**)
- 7-[(1R,4S,5R)-5-((E)-4-Benzo[b]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl]-hept-5-ynoic acid (**74,75**).

3. A compound represented by Formula I:

**Formula I**

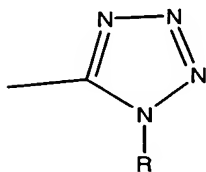
wherein the dashed lines indicate the presence or absence of a bond, the hatched
 5 wedges indicate the α (down) configuration, and the solid triangles indicate the β (up) configuration;

B is a single, double, or triple covalent bond;

n is 0-6;

X is CH₂, S or O;

10 Y is any pharmaceutically acceptable salt of CO₂H, or CO₂R, CONR₂,
 CONHCH₂CH₂OH, CON(CH₂CH₂OH)₂, CH₂OR, P(O)(OR)₂, CONRSO₂R,
 SONR₂, or



R is H, C₁₋₆ alkyl or C₂₋₆ alkenyl;

15 R² and R³ are C₁₋₆ linear alkyl which may be the same or different, and may be
 bonded to each other such that they form a ring incorporating the carbon to
 which they are commonly attached;

R⁴ is hydrogen, R, C(=O)R, or any group that is easily removed under
 physiological conditions such that R⁴ is effectively hydrogen;

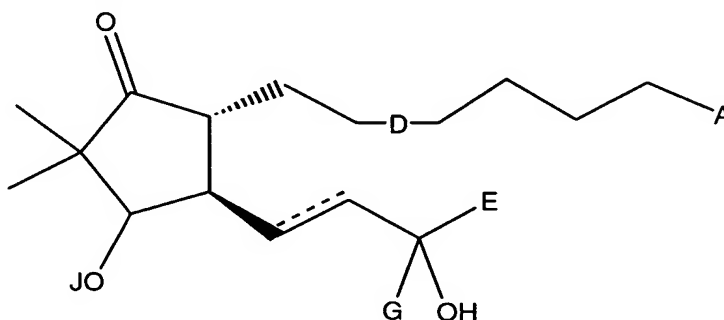
20 R⁵ is hydrogen or R;

R⁶ is

i) hydrogen;

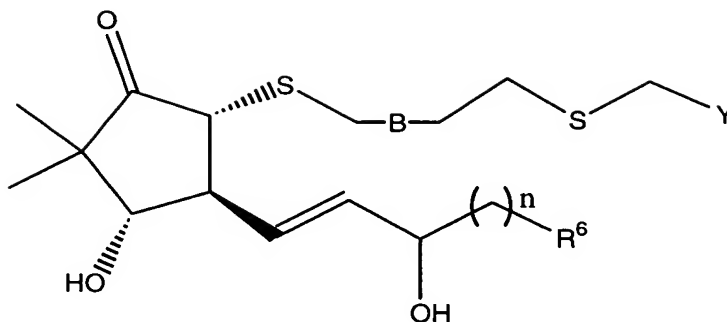
- ii) a linear or branched hydrocarbon containing between 1 and 8 carbon atoms, which may contain one or more double or triple bonds, or oxygen or halogen derivatives of said hydrocarbon, wherein 1-3 carbon or hydrogen atoms may be substituted by O or a halogen; or
- 5 iii) aryloxy, heteroaryloxy, C₃₋₈ cycloalkyloxy, C₃₋₈ cycloalkyl, C₆₋₁₀ aryl or C₃₋₁₀ heteroaryl, wherein one or more carbons is substituted with N, O, or S; and which may contain one or more substituents selected from the group consisting of halogen, trihalomethyl, cyano, nitro, amino, hydroxy, C₆₋₁₀ aryl, C₃₋₁₀ heteroaryl, aryloxy, heteroaryloxy, C₁₋₆ alkyl,
- 10 OR, SR, and SO₂R; and

the compound of Formula I is not a compound of Formula II



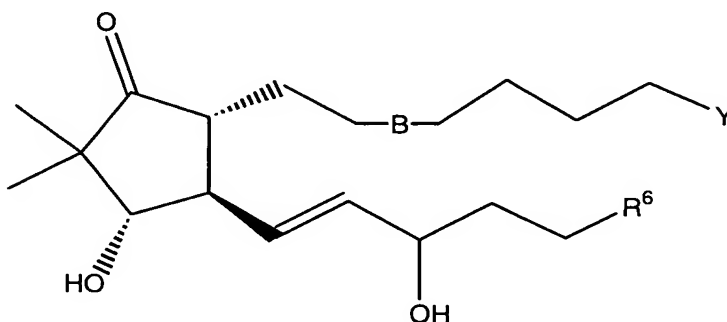
Formula II

- wherein A is CO₂H, CO₂Me, or CO₂Et;
- 15 D is a single, double, or triple covalent bond;
- E is a linear, branched, or cycloalkyl chain of 3 to 7 carbons, trifluoromethylbutyl, hydroxylalkyl, or CH₂R⁷ wherein R⁷ is phenyl, cyclopentyl, phenoxy, chlorophenoxy, propoxy, or -CH₂SCH₂CH₃;
- J is hydrogen, R, C(=O)R, or any group that is easily removed under
- 20 physiological conditions such that R⁴ is effectively hydrogen; and
- G is H or CH₃.
4. The compound of claim 18 wherein A is CO₂R⁸, wherein R⁸ is any linear, branched, or cyclic alkyl group having from 3 to 6 carbons.
5. The compound of claim 18 which is further represented by Formula III

**Formula III**

wherein Y is CO₂R, or any pharmaceutically acceptable salt of CO₂H.

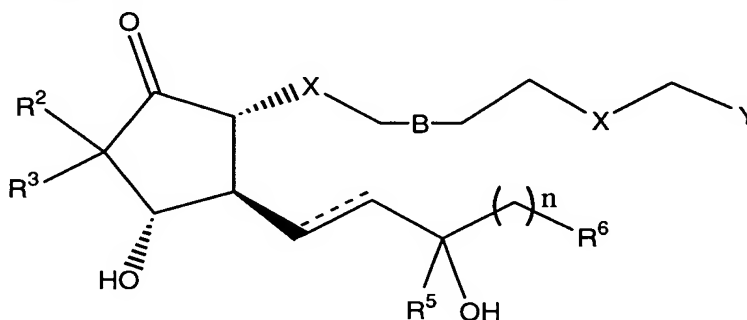
6. The compound of claim 19 wherein R⁶ is C₆₋₁₀ aryl or C₃₋₁₀ heteroaryl, wherein one or more carbons is substituted with N, O, or S; and which may
- 5 contain one or more substituents selected from the group consisting of halogen, trihalomethyl, cyano, nitro, amino, hydroxy, C₁₋₆ alkyl, OR, SR, and SO₂R.
7. The compound of claim 20 wherein R⁶ is naphthyl, benzofuranyl, or benzothienyl, which may contain one or more substituents selected from the group consisting of halogen, trihalomethyl, cyano, nitro, amino, hydroxy, C₁₋₆
- 10 alkyl, OR, SR, and SO₂R.
8. The compound of claim 21 wherein Y is CO₂H or CO₂Me.
9. The compound of claim 22 where R⁶ is 3-chlorobenzothien-2-yl.
10. The compound of claim 23 where n is 2.
11. The compound of claim 24 where B is a single bond.
- 15 12. The compound of claim 18 which is further represented by Formula IV

**Formula IV**

wherein Y is CO₂R or any pharmaceutically acceptable salt of CO₂H; and

R^6 is C_{6-10} aryl or C_{3-10} heteroaryl, wherein one or more carbons is substituted with N, O, or S; and which may contain one or more substituents selected from the group consisting of halogen, trihalomethyl, cyano, nitro, amino, hydroxy, C_{1-6} alkyl, OR, SR, and SO_2R .

- 5 13. The compound of claim 26 wherein Y is CO_2H or CO_2Me .
14. The compound of claim 27 wherein R^6 is phenyl.
15. The compound of claim 28 wherein B is a double bond.
16. The compound of claim 27 wherein R^6 is naphthyl, benzofuranyl, or benzothienyl, which may contain one or more substituents selected from the
- 10 group consisting of halogen, trihalomethyl, cyano, nitro, amino, hydroxy, C_{1-6} alkyl, OR, SR, and SO_2R .
17. The compound of claim 30 wherein R^6 is 3-chlorobenzothien-2-yl.
18. The compound of claim 31 wherein B is a double or triple bond.
19. The compound of claim 18 which is further represented by Formula V



Formula V

- 15 wherein at least one of R^2 and R^3 is not methyl.
20. The compound of claim 33 wherein R^2 and R^3 have a total number of carbon atoms of 6 or less.
21. The compound of claim 34 wherein R^5 is hydrogen.
- 20 22. The compound of claim 18 wherein said compound is selected from the group consisting of
 (3-((1*R*,4*S*,5*S*)-5-(3-chloro-benzo[*b*]thiophen-2-yl)-3-hydroxy-pent-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentylsulfanyl)-propylsulfanyl)-acetic acid methyl ester (**21**, **22**);

- (3-((1*R*,4*S*,5*S*)-5-(3-chloro-benzo[*b*]thiophen-2-yl)-3-hydroxy-pent-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentylsulfanyl)-propylsulfanyl)-acetic acid (**23, 24**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-((*E*)-5-(3-chloro-benzo[*b*]thiophene-2-yl)-3-hydroxy-pent-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-ynoic acid methyl ester (**34, 35**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-((*E*)-5-(3-chloro-benzo[*b*]thiophene-2-yl)-3-hydroxy-pent-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-ynoic acid (**36,37**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-((*E*)-5-(3-chloro-benzo[*b*]thiophene-2-yl)-3-hydroxy-pent-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid methyl ester (**38,39**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-((*E*)-5-(3-chloro-benzo[*b*]thiophene-2-yl)-3-hydroxy-pent-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid (**40,41**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-4-Hydroxy-5-((*E*)-3-hydroxy-5-phenyl-pent-1-enyl)-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid methyl ester (**50,51**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-4-Hydroxy-5-((*E*)-3-hydroxy-5-phenyl-pent-1-enyl)-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid (**52,53**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-((*E*)-4-Benzo[*b*]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid (**54,55**);
- 7-((1*R*,4*S*,5*R*)-5-((*E*)-4-Benzo[*b*]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-heptanoic acid (**56,57**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-(4-Benzo[*b*]thiophen-2-yl-3-hydroxy-butyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid (**58,59**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-((*E*)-4-Benzo[*b*]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid ethylamide (**60,61**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-((*E*)-4-Benzo[*b*]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid diethylamide (**62,63**);
- (*Z*)-7-((1*R*,4*S*,5*R*)-5-((*E*)-4-Benzo[*b*]thiophen-2-yl-3-hydroxy-but-1-enyl)-4-hydroxy-3,3-dimethyl-2-oxo-cyclopentyl)-hept-5-enoic acid (2-hydroxy-ethyl)-amide (**64,65**);

26. The compound of claim 49 wherein the dashed line indicates the presence of a bond and B is a double bond.
27. The compound of claim 49 wherein the dashed line indicates the presence of a bond and B is a single bond.
- 5 28. The compound of claim 49 wherein the dashed line indicates the absence of a bond and B is a double bond.